FOREST PRODUCTS INDUSTRY OF THE FUTURE
SOLICITATION DE-PS07-00ID13966

Issued by the American Forest and Paper Association in Partnership with the Department of Energy

ISSUED BY
The American Forest and Paper Association
1111 19th Street, NW
Suite 800
Washington, DC 20036
Per Agreement with DOE "Agenda 2020 - Forest Products Industries of the Future"

COORDINATED WITH
Department of Energy
Office of Industrial Technologies
1000 Independence Ave., SW
Washington, DC 20585

ACTION
Solicitation for Financial Assistance: DE-PS07-00ID13966, Forest Products Visions of the Future Solicitation.

SUMMARY
The American Forest and Paper Association (AF&PA) in cooperation with the U.S. Department of Energy (DOE), is seeking applications for cost-shared research and development of technologies which will reduce energy consumption, enhance economic competitiveness, and reduce environmental impacts of the Forest Products Industry. The research is to address research priorities in the recycling, energy performance and environmental performance areas. Approximately $2,000,000 in federal funds is expected to be available to fund the first year of selected research efforts. DOE anticipates making 7 or more cooperative agreement awards each with a duration of five years or less.

Out-year funding for selected projects shall depend upon availability of funds, as well as upon satisfactory progress towards project goals and deliverables. Total available funds for future years is anticipated to be similar to first year funding.

Collaborations between industry, university, and National Laboratory participants are encouraged. The cooperative agreements will be awarded in accordance with DOE Financial Assistance regulations, Title 10 of the Code of Federal Regulations, Chapter II Subchapter H, Part 600 (10 CFR 600). Award of a cooperative agreement under this solicitation does not commit the Government to fund any follow-on research. Successful applicants will be required to submit quarterly, annual, and final reports to DOE and attend an annual task group meeting and make a presentation on the status of their work.

Project performance periods are divided into budget periods. The performance period for the first budget period is anticipated to be 12 months. DOE may issue a continuation award (e.g., the second budget period), if the awardee demonstrates a continuing need for federal assistance; shows sufficient progress in the research effort; has completed the objectives in compliance with a mutually agreed upon management plan; has submitted timely and informative reports; and identifies the objectives planned for the new budget period.

After the feasibility of the technology is proven on selected projects, AF&PA is available to assist in identifing members for an industry advisory group, to assist the researcher in getting industry input to establish the greatest benefit of the work to the forest products industry.

RENEWALS

Individuals with existing Department of Energy "Agenda 2020 - Forest Products Industries of the Future" projects may submit a renewal proposal for the existing project under this solicitation. Renewal applications may be be submitted for any task group area. Renewal applications should submit a five page application only, at the approriate due date.

COST SHARE
Only proposals submitted with the following minimum cost share requirements will be considered:

1) For feasibility: a 20% minimum cost share from non-federal sources (i.e. Agenda 2020 funding from DOE will provide only 80% of the total project costs, at most).

2) For projects that are in the development phase with a proven feasibility: a 30% minimum cost share from non-federal sources.

3) For projects involving commercial demonstration of technologies: a 50% minimum cost share from non-federal sources.

4) A minimum of 20% of the annual project cost must be cost shared that year, the total cost shared must be committed by project completion.

Cost share contributions need not be monetary (e.g. in-kind contributions are allowed). Industrial and/or supplier involvement and cost sharing above the required minimums are strongly encouraged. Cost share may not be other federal funding. Reference 10 CFR 600.123 and 10 CFR 600.127.

ELIGIBLE APPLICANTS
For-profit, non-profit, state and local governments, Indian Tribes, and institutions of higher education may submit applications in response to this solicitation**. Multi-partner collaborations between industry, university, and National Laboratory participants are encouraged. Single organization awards will not be considered.** Industrial partners must be included, either as primary applicants or as cost sharing partners.

Member companies of AF&PA will not be eligible for award under this solicitation.

National laboratories will not be eligible for an award under this solicitation. However, an application that includes performance of a portion of the work by a National Laboratory may be considered for award provided the applicant clearly identifies the unique capabilities, facilities and/or expertise the Laboratory offers the primary applicant. National Laboratories will receive their funding through their existing arrangements with the Government via Field Work Proposals.

STATUTORY AUTHORITY
The statutory authority for this program is the Federal Non-Nuclear Energy Research and Development Act of 1974 (Public Law 93-577).

CFDA NUMBER
The Catalog of Federal Domestic Assistance (CFDA) Number for this program is 81.086, *Conservation Research and Development*.

FOR FURTHER INFORMATION OR QUESTIONS AND ANSWERS CONTACT:
General Information or Questions

Contact: David Friedman
Director, Energy and Technology
American Forest and Paper Association
1111 19th Street, NW, Suite 800
Washington, DC 20036
Phone Number: (202) 463-5159
Fax Number: (202) 463-5180
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Recycling Task Group Specific Information and Questions
Contact: Gregg Brelsford
e-mail: glbrels@westvaco.com

OR

Joe Gorman
e-mail: joe.gorman@spnewsprint.com

Energy Performance Task Group Specific Information and Questions
Contact: Bill Nicholson
e-mail: wjnichol@potlatchcorp.com

Environmental Performance Task Group Specific Information and Questions
Contact: Dan Sjolseth
e-mail: dan.sjolseth@weyerhaeuser.com

APPLICATIONS
All new applications will be submitted in a 2 phase process.

A separate application shall be prepared for each project (i.e., do not combine two or more projects in one application).

Applications submitted in response to this solicitation **shall not contain trade secrets and/or privileged or confidential commercial or financial information** which the applicant does not want used or disclosed. Proposals marked as containing such information will not be reviewed.

DOE will mail written notifications regarding projects selected for funding in mid to late July, 2001. If an applicant is selected for an award under this solicitation, the applicant must furnish supplemental documentation. This information will be identified and requested at notification of selection. All of the supplemental documentation must be furnished within 30 calendar days after the applicant receives notification of selection for negotiations and award. Failure to furnish the supplemental documentation will result in award delays or may negate the selection.

Supplemental documentation may include pre-award certifications, cost information and an environmental checklist.

Successful applicants will be required to prepare a two-page nonproprietary project fact sheet of the proposed project including project benefits suitable for public release, before award and updated on an annual basis.

National Laboratory collaborators will be required to submit Field Work Proposals (FWP).

No fee or profit will be paid to cooperative agreement award recipients.

APPLICATION DUE DATES
Applications will be submitted in a 2-phase process. Closing dates are:
Two page Application October 15, 2000 at 5:00 PM Eastern Time
Five page Application March 15, 2001 at 5:00 PM Eastern Time

Ten (10) copies of the proposal must be submitted, for each the 2 page and 5 page application.

SUBMITTAL ADDRESS
Both 2 page and 5 page applications must be submitted to:

David Friedman
American Forest and Paper Association
1111 19th Street, NW, Suite 800
Washington, DC 20036

Caution: Applicants assume full responsibility for insuring that the application is received at the specified place by the specified time and date and with the specified number of copies.

Section I: Supplementary Information

A. Background

In 1994, the American Forest & Paper Association (AF&PA) released Agenda 2020: A Technology Vision and Research Agenda for America's Forest, Wood, and Paper Industry, which outlines the research needs of the forest products industry to allow it to pursue a sustainable future. At that time the AF&PA and the Department of Energy, (DOE) signed a compact to implement this research agenda. In 1996, the industry organized a process, under the aegis of the AF&PA Chief Technology Officers (CTO) Committee, to assist DOE in identifying research projects most important to the industry's Agenda 2020 Vision. Since that time, approximately 90 projects identified through this process have received DOE funding.

Agenda 2020 identified six areas appropriate for precompetitive research: sustainable forestry, environmental performance, energy performance, capital effectiveness, recycling and sensors and control. Industrial task groups were organized, reporting to the CTO Committee to work with the federal government to implement a research program in support of the Agenda 2020 Vision. Annually, these task groups identify areas of greatest potential value which are appropriate for precompetitive research, and define technology gaps in the U.S Forest Products Industry's research activities. Collaboration between universities, research institutes, national laboratories, and industry associations is highly encouraged and valued.

B. Project Description

Three Task Groups are participating in this request: recycling, energy performance and environmental performance. For additional information on Agenda 2020 refer to the DOE or Agenda 2020 websites at www.oit.doe.gov/forest or www.Agenda2020.org.

Recycling
The Recycling Task Group is interested in receiving precompetitive research, development and demonstration preproposals in the specific areas listed below:

1) Reduce the impact of contamination by 25% by 2010 and 50% by 2020.
2) Develop new separation technologies to reduce the energy and capital required per daily ton of production by 25% by 2010 and 50% by 2020.
3) Increase the use of recycling mill residuals, waxed corrugated, and recovered wood by 50% by 2020.

Additional information is provided for recycle research topics in Attachment 1.

Energy Performance
The Energy Performance Task Group is interested in receiving precompetitive research, development and demonstration preproposals in the specific areas listed below:

1) New approaches to drying and water removal.
2) Combined-cycle gasification of black liquor and biomass.
3) Improved recovery cycle performance.
4) Fundamental mechanisms and new processes for recovering and converting biomass materials into high-energy-density fuels and products.
5) Identification and demonstration of more economical and energy efficient processes for manufacture of pulp, paper and engineered wood products.
6) Alternatives to or systems to increase the efficiency of combustion as a pollution control mechanism.

Additional information is provided for energy performance research topics in Attachment 2.

Environment Performance
The Environmental Performance Task Group is interested in receiving precompetitive research, development and demonstration preproposals.

Additional information is provided for environmental performance research topics in Attachment 1.

All projects in all task group areas must have the potential to achieve significant national energy savings when commercialized in the U.S. Forest Products Industry.

SECTION II: Technical Application Requirements

Each application must contain the following information and must use the identified format:

Applications will be submitted in a 2-phase process.

To be considered for DOE funding an initial 2-page proposal is required, unless submitting a renewal application.

A. 2-PAGE PROPOSAL SUBMITTAL PROCESS

Researchers interested in having 2-page proposals considered for funding starting in October 2002 are first asked to describe their research proposals in 2-page (single-sided) proposals. **These 2-page proposals are due to AF&PA by 5 p.m. Eastern Time, October 15, 2000.**

2-page proposals received after the aforementioned date will be considered a late submission and not eligible for consideration unless they: (a) were postmarked or otherwise dated by a commercial mail carrier not later than the application due date specified above (PRIVATE METERED POSTMARKS ARE NOT ACCEPTABLE PROOF OF THE DATE OF MAILING) **and** (b) were received before the technical evaluation of applications submitted in response to the solicitation begins.

Each 2-page proposal should be prepared using the format shown in Attachment 4. The size of each section of the 2-page proposal can be adjusted as needed as long as the total length is not more than 2 pages. The typed text should be no smaller than 12-point font. **Pages beyond the 2-page limit will not be evaluated.**

Everyone submitting a two-page proposal will receive written notification from the AF&PA on their desire to review a 5-page proposal in late December 2000. Based upon prior year results, approximately 30% - 40% of the 2-page proposals are selected by the Merit Review Committee for a more detailed review via a 5-page proposal.

B. 5-PAGE PROPOSAL SUBMITTAL PROCESS

The 5-page proposals, will be due to the AF&PA by 5 p.m. Eastern Standard Time, March 15, 2001. 5-page proposals received after the aforementioned date will be considered late submissions and not eligible for consideration unless they: (a) were postmarked or otherwise dated by a commercial mail carrier not later than the application due date specified above (PRIVATE METERED POSTMARKS ARE NOT ACCEPTABLE PROOF OF THE DATE OF MAILING) **and** (b) were received before the technical evaluation of applications submitted in response to the solicitation begins.

Each 5-page proposal should be prepared using the format in Attachment 5. The size of each section of the 5-page proposal should be appropriate as long as the total length is not more than 5 pages; attachments do not count as part of the 5 pages. The typed text should be no smaller than 12-point font. Only information provided in the 5-page proposal or as attachments can be considered in the evaluation process. **Pages beyond the 5-page limit will not be evaluated.** Attachments 6 and 7 and industry letters of support are required attachments to the 5-page proposals, the attachments do not count as part of the 5 pages. Proposals failing to submit Attachments 6 and 7 and industry letters of support will not be considered for selection.

Application formats for 2 and 5 page proposals are different. See Attachments 4 & 5 for details.

SECTION III: Application Evaluation

A. Proposal Merit Review and Selection Criteria

Only those applications which meet all of the requirements of this solicitation will be considered for selection. Selections will be made in accordance with the following selection criteria and programmatic considerations. All applications will be evaluated and point-scored in accordance with the following criteria. The applications must be fully responsive to each of the criteria.

Applicants may be requested to make a short overview/question and answer presentation to the techincal review committee before the committee makes their final recommendation of

which proposals should be supported. Presentations can be done in person or by video or teleconference.

Proposals will be reviewed using a three-step technical evaluation process, followed by a DOE programmatic evaluation process. The appropriate Agenda 2020 Task Group will perform the first two technical merit reviews.

The 2 page proposals will be evaluated according to the following evaluation criteria.

The reviewers will score each proposal on each of the below criteria for a maximum of 100 points. The evaluation criteria are weighted as indicated.

1) Scientific, technical merit, and feasibility (25 points) – The technical potential of the proposal will be evaluated considering the clarity, completeness and adequacy of the statement of objectives and alignment with solicitation priorities. The technical merit and feasibility of the proposed work will also be evaluated. (Is it based on sound scientific/engineering principles and on an understanding of the current state of the art in the forest products industry?)

2) Shared industry/national goals (20 points) - The potential for enhancing the economic competitiveness of the North American forest products industry, the opportunity to impact energy use efficiency and the opportunity to increase utilization of indigenous renewable energy with increased environmental benefits are all areas of importance to both the forest products industry and the national agenda. The extent to which proposers define how the project will impact these shared objectives will be evaluated. **Note that those proposals selected by DOE for funding are required to have significant energy benefits**.

3) Commercial potential and plan (15 points) – Is there a market for the product? Will the process be improved? How will the results reach the market? Is there a defined and credible plan to transfer and implement or commercialize the technology?

4) Appropriate degree of collaboration (10 points) – Capabilities will be evaluated considering the ability to assemble a multi-disciplined team with research experience, qualifications in the proposal subject area, and knowledge of past advanced developments in the proposed work area. Participant(s) facilities will be evaluated on the availability of equipment, laboratory and demonstration facilities, analytic support and other necessary resources for performing the work proposed. Project management methods will also be evaluated. In addition, industry and industrial supplier participation are encouraged.

5) Innovation (10 points) – The innovation will be evaluated either in terms of providing improved fundamental understanding that could lead to solving an important problem or suggesting a new approach to solving an important problems.

6) Probability of meeting objectives (10 points) – The adequacy and appropriateness of the schedule (sequence of project tasks, planned levels of data acquisition, sampling and analysis, principal milestones, decision points, and time for each task) and the planned assignment of responsibilities and level of manpower to complete each task will be evaluated.

7) Qualifications and experience of the Principal Investigator (10 points)– Do the investigators have adequate experience given the goals and objectives of the project?

The second step of the merit review process is an evaluation of the 5-page proposals by the appropriate Agenda 2020 task group, using the evaluation criteria below.

The reviewers will score each proposal on each of the below criteria for a maximum of 100 points. The evaluation criteria are weighted as indicated.

1) Scientific, technical merit, and feasibility (25 points) – The technical potential of the proposal will be evaluated considering the clarity, completeness and adequacy of the statement of objectives and alignment with solicitation priorities. The technical merit and feasibility of the proposed work will also be evaluated. (Is it based on sound scientific/engineering principles and on an understanding of the current state of the art in the forest products industry?)

2) Shared industry/national goals (20 points) – Energy, environmental and global competitiveness opportunities identified in the two-page proposals should be further addressed here. To the extent possible, indicate expectations with respect to energy and environmental impacts. **Note that those proposals selected by DOE for funding are required to have significant energy benefits**. **These benefits will be evaluated based on the data provided in the OIT Performance Metrics, Attachment 7**.

3) Commercial potential and plan (15 points) – Is there a market for the product? Will the process be improved? How will the results reach the market? Is there a defined and credible plan to transfer and implement or commercialize the technology?

4) Appropriate degree of collaboration (10 points) – Capabilities will be evaluated considering the ability to assemble a multi-disciplined team with research experience, qualifications in the proposal subject area, and knowledge of past advanced developments in the proposed work area. Participant(s) facilities will be evaluated on the availability of equipment, laboratory and demonstration facilities, analytic support and other necessary resources for performing the work proposed. Project management methods will also be evaluated. In addition, industry and industrial supplier participation are encouraged.

5) Innovation (10 points) – The innovation will be evaluated either in terms of providing improved fundamental understanding that could lead to solving an important problem or suggesting a new approach to solving an important problems.

6) Probability of meeting objectives (10 points) – The adequacy and appropriateness of the schedule (sequence of project tasks, planned levels of data acquisition, sampling and analysis, principal milestones, decision points, and time for each task) and the planned assignment of responsibilities and level of manpower to complete each task will be evaluated.

7) Qualifications and experience of the Principal Investigator (10 points)– Do the investigators have adequate experience given the goals and objectives of the project?

In the third step the CTO Committee compiles an overall technical merit ranking of the 5-page proposals in June 2001.

The CTOs will look at the resulting portfolio of projects to determine if a proper balance exists across industry sectors and between research, development and commercial demonstrations

that is consistent with the priorities of the Agenda 2020 visioning process, using the evaluation criteria below.

The reviewers will score each proposal on each of the below criteria for a maximum of 100 points. The evaluation criteria are weighted as indicated.

1) Projects with highest industry leverage (25 points) – Projects will be assessed to determine their value to the industry. If the technology is assumed to be successfully implemented, what is the ultimate impact on the industry?

2) Alignment with AF&PA strategies (20 points) – The technologies that are supported from an industry perspective should be consistent with the industry's vision as expressed in Agenda 2020 and support shared industry/national goals.

3) Commercial potential and plan (20 points) – Is there a market for the product? Will the process be improved? How will the results reach the market? Is there a defined and credible plan to transfer and implement or commercialize the technology?

4) Scientific, technical merit, and feasibility (20 points) – The technical potential of the proposal will be evaluated considering the innovation, clarity, completeness and adequacy of the statement of objectives and alignment with solicitation priorities.

   The technical merit and feasibility of the proposed work will also be evaluated. Is it based on sound scientific/engineering principles and on an understanding of the current state of the art in the forest products industry. Will it of provide improved fundamental understanding that could lead to solving an important problem or suggesting a new approach to solving an important problems?

   Is the approach to the work proposed and the project management, reasonable? Do the investigators have adequate experience given the goals and objectives of the project? Capabilities will be evaluated considering the ability to assemble a multi-disciplined team with research experience, qualifications in the proposal subject area, and knowledge of past advanced developments in the proposed work area. Participant(s) facilities will be evaluated on the availability of equipment, laboratory and demonstration facilities, analytic support and other necessary resources for performing the work proposed. In addition, industry and industrial supplier participation are encouraged.

5) Achieving a goal of moving towards a 50% portfolio cost share (15 points) – Projects will be evaluated on their cost share percentage as appropriate to the project stage. Monetary cost share and cost share from industry and industrial supplier partners will be considered as more important than in-kind contributions or cost share from the proposer.

The CTO review score is combined with the task group five page technical review score to establish the final proposal ranking, which is forwarded to DOE.

B. Programmatic Selection Consideration

The DOE Office of Industrial Technologies forest products team performs the program policy review and develops a list of recommended projects for the DOE selection official. The DOE Program Policy Committee uses the industrial merit review ranking as the basis for discussing projects to recommend for selection.

In making its final recommendations, the DOE Program Policy Committee uses the following criteria:

1) Quantified Energy Benefits to the Industry - The energy benefits will be evaluated considering the potential for the proposed technology to contribute to the reduction of the manufacturing energy consumption of the domestic forest and paper industry. The energy benefits will be evaluated based on the data provided in the OIT Performance Metrics.

2) Quantified environmental and economic benefits – Proposals that have the potential to reduce negative environmental impacts and provide significant cost benefit are preferred. Proposals that also offer significant reductions in greenhouse gas emissions (carbon, perfluorocarbons) are particularly encouraged.

3) The desire for a portfolio of research projects balanced with respect to industry process areas (i.e., manufacture of wood products, wood drying, fiber supply, debarking, chipping, pulping, chemical recovery, bleaching, refining, washing, headbox, formation, wet end, pressing, drying, and water and air effluent systems) long-term vs. short-term market penetration horizons, and short duration vs. long duration projects.

4) Industry involvement – Proposals must have documented industrial support of the proposal via letters of support provided as attachments. The letters of support must be from the forest products industry or be a supplier to the forest products industry. While the letters do not have to document a financial commitment to the proposal, letters that do document a financial commitment will be given preference.

5) Cost and schedule – The cost and schedule of the proposal may be the basis of selection between projects of relative importance. In making selection decisions, the apparent advantages of individual applicants will be weighed against the probable cost to the government to determine whether the proposal approaches are worth the probable cost difference.

6) Program and geographic diversity

The DOE Program Policy Committee will recommend proposals to the DOE Selection Official for final selection.

SECTION IV: General Conditions

A. Non-governmental Reviewers

In conducting this evaluation, the Government may utilize assistance and advice from non-Government personnel. Applicants are therefore requested to state on the cover sheet of the applications if they do not consent to an evaluation by such non-Government personnel. The applicants are further advised that DOE may be unable to give full consideration to an application submitted without such consent.

B. Application Preparation Costs

DOE is under no obligation, and will not pay, for any costs associated with preparation or submission of applications.

C. Partial Awards

DOE reserves the right to support, or not to support, all, or any part of any application. Unsuccessful applications will not be returned.

SECTION V: Notices to Applicants

A. False Statements

Applications must set forth full, accurate, and complete information as required by this solicitation. The penalty for making false statements is prescribed in 18 U.S.C. 1001.

B. Application Clarification

DOE reserves the right to require applications to be clarified or supplemented to the extent considered necessary either through additional written submissions or oral presentations.

C. Commitment of Public Funds

The Contracting Officer is the only individual who can legally commit the Government to the expenditure of public funds in connection with the proposed award. Any other commitment, either explicit or implied, is invalid.

D. Availability of Funds

The actual amount of funds to be obligated in each fiscal year will be subject to availability of funds appropriated by Congress. DOE reserves the right to fund in whole or in part, any, all or none of the applications submitted in response to this solicitation.

E. Assurances and Certifications

DOE requires the submission of pre-award assurances of compliance and certifications, which are mandated by law or regulations. These submissions shall be completed and provided when requested by the contract specialist.

F. Pre-award Costs

The government is not liable for any costs incurred in preparation of an application. Awardees may incur pre-award costs up to ninety (90) days prior to the effective date of award. Specific, written authorization from the Contracting Officer is required before pre-award costs are incurred if the authorization is needed for more than 90 calendar days or if the project is a non-research project. Should the awardee take such action, it is done so at the awardee's risk and does not impose any obligation on the DOE to issue an award (10 CFR 600.125). Pre-award cost authorizations will not be made retroactively.

G. Patents, Data, and Copyrights

Applicants are advised that patents, data, and copyrights will be treated in accordance with 10 CFR 600.27.

H. Environmental Impact

DOE requires the submission of an applicant environmental checklist before award. Award will not be made until any and all environmental requirements are completed. This submission shall be completed when requested.

I. EPACT

Applicants who are classified as a business entity, other than an institution of higher education or an organization of the type described in section 501(c)(3) of the Internal Revenue Code of 1954, will be required to comply with Section 2306 of the Energy Policy Act of 1992 (EPACT) [42 U.S.C. 13525], as applicable and as described in Financial Assistance letter number 96-02 issued on August 01, 1996. This Financial Assistance letter requires DOE to determine: (1) if the applicant's participation in the program will be in the economic interest of the United States and, (2) if the applicant is a United States owned company.

J. DOE Minority Economic Impact Loan

DOE Minority Economic Impact loans are not available for this solicitation.

K. Buy American Act

NOTICE REGARDING THE PURCHASE OF AMERICAN-MADE EQUIPMENT AND PRODUCTS -- SENSE OF CONGRESS

It is the sense of the Congress that, to the greatest extent practicable, all equipment and products purchased with funds made available under this award shall be American-made.

COMPLIANCE WITH BUY AMERICAN ACT

In accepting this award, the recipient agrees to comply with sections 2 through 4 of the Act of March 3, 1933 (41 U.S.C. 10a - 10c, popularly known as the "Buy American Act"). The recipient shall review the provisions of the Act to ensure that expenditures made under this award are in accordance with it.

L. Simpson-Craig Amendment

Applicant organizations which are described in section 501(c)(4) of the Internal Revenue Code of 1986 and engage in lobbying activities after December 31, 1995, will not be eligible for the receipt of federal funds constituting an award, grant, or loan.

M. Lobbying Restriction

The recipient agrees that none of the funds obligated on this award shall be made available for any activity or the publication or distribution of literature that in any way tends to promote public support or opposition to any legislative proposal on which Congressional action is not complete. This restriction is in addition to those prescribed else where in statute and regulation.

N. Terms and Conditions Applicable to Awards

Awardees will be required to comply with the standard terms and conditions listed at the DOE-ID PSD Current Solicitations website.

URL ADDRESSES FOR DOCUMENTS & FORMS REFERENCED IN THIS SOLICITATION

1. Terms and Conditions Applicable to Awards - http://www.id.doe.gov/doeid/psd/proc-div.html - Click on "Federal Assistance Application and Administration Forms," located on the lefthand side of the screen, and then scroll down.

2. 10 CFR 600, *Assistance Regulations* - http://www.pr.doe.gov/f600toc.html

3. Financial Assistance Letter 96-02 - http://www.pr.doe.gov/fals.html

4. Buy American Act (41 U.S.C. 10a - 10c) - http://www4.law.cornell.edu/uscode/41/ch1.html

ATTACHMENT 1

RECYCLING TECHNOLOGY RESEARCH TARGETS

Attachment 1 - Recycling Technology Research Targets

The strategic vision for Agenda 2020 emphasizes the need for **higher value raw materials.** Increasing the value of recovered fiber and wood are critical components to this strategic platform. The Recycling Technology Task Group has set an overall goal to **achieve a 50% reduction in product quality losses attributable to the use of recycled fiber and wood by the year 2020.** This goal establishes a challenge to improve recycled-content product quality with inherent energy savings potential. The goal will be achieved by commercializing new energy-efficient technologies that yield reduced contamination in recovered materials.

The targets below, in combination with the overall Task Group goal and the U.S. Department of Energy performance matrix in this solicitation, are for your use in developing proposals. We also strongly encourage you to develop proposals that incorporate alliances with key users of products that contain recycled materials. Examples of this type of interaction include the recycling research program at the U.S. Postal Service for pressure sensitive adhesives and release liners (see their web site for more information). The Recycling Technology Task group is particularly interested in selecting projects with rapid commercialization potential.

1. **Reduce the impact of contamination by 25% by 2010 and 50% by 2020.**

   This top priority is intended to encourage the development and commercialization of new adhesives. Breakthrough work is sought to eliminate the impact of cohesives in recycled content paper/board manufacturing. Cohesives are generally classified as materials that remain tacky and withstand repeated use.

2. **Develop new separation technologies to reduce the energy and capital required per daily ton of production by 25% by 2010 and 50% by 2020.**

   New, more energy efficient cleaning systems technologies are needed to allow for more specific separation between desirable recycled components and unacceptable contaminants. Innovative collection techniques and equipment are needed to ensure manufacturing efficiency and product quality, especially within the context of a growing trend toward single source, co-mingled raw materials collection.

3. **Increase the use of recycling mill residuals, waxed corrugated, and recovered wood by 50% by 2020.**

   Creative and effective ways to significantly reduce the energy and cost of handling residuals from a recycling operation are needed. Proposals for the use of mill residuals, waxed corrugated, and recovered wood in new applications are sought.

ATTACHMENT 2

ENERGY PERFORMANCE AREAS TARGETED FOR 2002

Attachment 2 - Energy Performance Areas Targeted For 2002

The American Forest & Paper Association Energy Performance Task Group is interested in receiving precompetitive research, development and demonstration preproposals in the specific areas detailed below. Please identify the number and title of your targeted area(s) when submitting your proposal.

1. New approaches to drying and water removal.

Water removal and drying are processes common to the manufacture of pulp and paper and wood products. Such processes include, but are not limited to, evaporation and concentration of spent pulping liquor prior to firing in a chemical recovery furnace, water removal in paper manufacturing, drying fiber strands in the manufacture of oriented strand board, kiln drying of lumber and use of residual materials and biomass as fuel. Process developments are needed which result in greater energy efficiency in existing or new processes to produce products, which perform the same or have similar functions as products made today. Consideration in this research must be given to the capital and cost effectiveness of possible developments, the environmental impact, and any effects on product characteristics. Research proposals may focus on one or several steps of one or more processes, but the anticipated result should lead to substantially less energy use associated with a product's manufacture and use on a cradle-to-grave basis.

2. Combined-cycle gasification of black liquor and biomass.

In 2000, the Department of Energy issued a solicitation for black liquor and biomass gasification commercialization and demonstration projects. It is anticipated that as a result of this solicitation, there will be several large-scale demonstration projects implemented over the next 5 to 7 years. In order to ensure the success of these large projects, there is an urgent need for focused technology advancements in several areas. These areas include: materials of construction; refractories; destruction/removal of tars and other condensibles; process modeling; and technologies for hot gas cleanup. New proposals should focus on these identified gaps.

3. Improved recovery cycle performance.

There are over 200 kraft recovery furnaces in operation in the United States with a combined energy capacity of approximately 50 GW. Expenditures on recovery processes represent over 25% of the total capital in integrated kraft pulp and paper mills. Incremental improvements in recovery process operation could lead to substantially enhanced economic performance (higher capacity, better energy efficiency, less emissions) and significant reductions in the mill's need for energy from other sources.

The kraft recovery process serves a dual function, generating steam from the heat of combustion of the organic constituents of black liquor, and recovering the inorganic chemicals (primarily sulfur and sodium) from the pulping process. This dual function makes the design and operation of the process much more complicated. Specific areas of interest include combustion and control improvements, green liquor process and process control improvements, white liquor process control improvements, and lime kiln operation and control improvements. Proposals that address energy issues related to the entire kraft recovery cycle are also encouraged.

4. Fundamental mechanisms and new processes for recovering and converting biomass materials into high-energy-density fuels and products.

As the industry continues to make progress in the recycling of paper and wood and in recovering more materials from plantations, tree farms, forests and waste streams in an environmentally acceptable and sustainable way, increased knowledge of the characteristics of these materials and new and improved process for recovering them and converting them at the source will become essential. Many residual materials will be generated in locations increasingly remote from the site of their potential use as feedstocks for pulp, paper, wood, chemical or energy products. Processes that will allow these materials to be converted at the source to increase density and yield and improve handling and transportation will become very important. In many situations, these processing systems must be mobile and in the case of forest and agricultural materials will have to include methods for returning essential elements and nutrients to the soils to ensure sustainable operations. Fundamental and applied research in the areas of recovery, material characterization, cleaning and separation, densification, conversion to more convenient new material or fuel forms, transportation and storage will be needed in order to stimulate the development of new techniques, equipment and systems for enabling the maximum recovery of materials to the highest value use in a sustainable, economical and environmentally sound manner.

5. Identification and demonstration of more economical and energy efficient processes for manufacture of pulp, paper and engineered wood products.

This technology area is focused on: the disassembly of biomass to fibers, strands, chips and veneer; the processing of fibers through pulping and bleaching; the associated chemical recovery cycle; and the reassembly of strands, chips, or veneer to solid wood products. The goal is to accomplish these processes in a significantly improved energy efficient manner. Possible techniques can employ biological, chemical or physical processes. Standards of comparison for energy use should be present or developing processes and proposed savings should be significant.

6. Alternatives to or systems to increase the efficiency of combustion as a pollution control mechanism.

Fundamental research is needed to develop alternatives to or to significantly improve the efficiency of combustion of airborne emissions created during the pulping and wood products manufacturing process. Non-condensible gases that are untreated in odorous gas system are typically disposed of in mills by burning them in power boilers, lime kilns, or dedicated thermal oxidation systems using fossil fuels. The offgases from certain scrubbers in the mills are also typically combusted as an emission control measure. Elimination of volatile organic compounds from wood products manufacturing by non-combustion methods is also a focus. Research is needed to develop ways of addressing the non-condensible gases, scrubber offgases and more conventional pollutants by non-combustion techniques, or considerably more efficient combustion methods.

ATTACHMENT 3

Agenda 2020 Environmental Research Priority Areas

Attachment 3 - Agenda 2020 Environmental Research Priority Areas

Precompetitive research resulting in energy-saving technologies regarding:

1. Delignification and bleaching technologies capable of producing pulps with high brightness and strength while improving yields, reducing costs, and addressing the impacts and control of non-process elements, soluble ions, and organic compounds.

2. Processes that will allow the industry to make further progress in reducing emissions of odorous gases.

3. Technologies for conditioning or treating in-process water streams or wastewaters to make them suitable for reuse in the mill.

4. By-product opportunities and beneficial uses of forest product production facility wastes and emissions (or for substances therein.)

5. Cost effective technologies for generating biomass fuels (e.g. methane, ethanol) from mill wastes, and for capturing and generating energy from methane formed in mill landfills. In addition, cost effective technologies are needed to reduce methane emissions from mill landfills where it can not be economically used as fuel.

6. More energy-efficient wastewater treatment technologies, (including particularly temperature reduction and low level heat recovery).

7. Methods to prevent and/or control volatile organic compounds (VOCs) and hazardous air pollutants (HAPs) released from forest product production facilities.

8. Plant-site methods for removing physical, chemical and biological contaminants from used wood so that it can be recycled.

9. Design and disassembly of wood structures for re-use or recycling of components.

10. Environmentally sound technologies or methods for extending the life of wood products by treatment of products before use, design for use, or diagnosis and treatment of physical, chemical or biological affects in use.

ATTACHMENT 4

TWO-PAGE PROPOSAL SUBMITTAL FORM

Attachment 4 – Two-Page Proposal Submittal Form

PROJECT TITLE:

PRIMARY INVESTIGATOR AND COLLABORATORS: (include full mailing address, phone, fax, e-mail, and congressional district for primary investigator)

RESEARCH AREA(S) IN THE SOLICITATION TO WHICH THIS WORK IS FOCUSED:

BACKGROUND:

OBJECTIVES:

TWO-PAGE PROPOSAL SUBMITTAL FORM

GENERAL EXPERIMENTAL APPROACH:

QUANTIFIED BENEFITS TO THE INDUSTRY SHOULD THE RESEARCH YIELD PROMISING RESULTS:

APPROXIMATE SCHEDULE AND MAJOR MILESTONES:

APPROXIMATE BUDGET AND SOURCES OF FUNDING (Including Cost Sharing) FOR EACH YEAR AND OVERALL:

Budget	Total	DOE Request	Cost Share
Total Project			
Year 1			
Year 2			
Year 3…..			

ATTACHMENT 5

FIVE-PAGE PROPOSAL SUBMITTAL FORMAT

Attachment 5 - Five-Page Proposal Submittal Format

A summary page (one page limit) should be provided in the following format using no smaller than a 12-point font type print. **This summary page is not included as part of the 5-pages.**

Agenda 2020 Research Area (i.e. sustainable forestry, environmental performance, energy performance, capital effectiveness, recycling or sensors and control)

Project Title:

Principle Investigator: (include name, organization, mailing address, phone number, fax number, e-mail, and congressional district)

Partners: (company names, mailing address, congressional district)

Abstract: (2-3 sentences that could be used for a press release)

Budget Table:

Budget	Total	DOE Request	Cost Share
Total Project			
Year 1			
Year 2			
Year 3…..			

The 5-page portion of the proposal must include the following main headings:

1. Project Title
2. Primary Investigator - name, title, company
3. Collaborators - name, title, address, and congressional district and who is providing cost share and the amount of cost share
4. Research Area in the solicitation to Which This Work Is Focused (see below)
5. Background
6. Objectives
7. Experimental Approach
8. Quantified benefits to the Industry Should the Research Yield Promising Results
9. Schedule, Milestones, Go/No-go decision points, and other Measures of Success including a path to commercialization
10. Investigator's and Collaborators' Qualifications - include citations of investigators' key publications most directly related to proposed work (do not attach resumes, publications, or publication lists)
11. Budget - include funding level required in each project year using the format provided in Attachment 6. This can be provided as an attachment and will not count as part of the 5 pages.

Attachments 6 and 7 and industry letters of support are required attachments to the 5-page proposals, the attachments do not count as part of the 5 pages. Proposals failing to submit attachments 6 and 7 and industry letters of support will not be considered for selection.

The size of each section of the proposal should be appropriate provided, however, that the total length of this portion is not more than 5 pages. The following attachments **are required for DOE funding** and do not count as part of the 5 pages:

- Industrial Letters of Support
- Detailed Budget
- OIT Project Performance Metrics Form (See Attachment 7)

Documentation of previously stated appropriate level of cost share (In-kind contributions (e.g., donations of material and labor) are acceptable as cost share, provided realistic dollar values are assigned to such contributions. Sunk costs (e.g., value of previous research) cannot be used for cost share.)

If a proposal is selected for negotiation and includes a DOE National Laboratory participant with unique capabilities, the National Laboratory will receive their funding directly from the DOE via the existing contract between DOE and the Laboratory rather than as a subcontract or work for others agreement. The cost share for the project should be based on a total project cost including the funding requested for the national laboratory.

The applicant should incorporate an annual trip in their proposal for one presentation each year of the project. The appropriate task group will also conduct an ongoing project review of selected projects via an annual report and presentation each year.

Baseline data to assist with the OIT Project Performance Metrics Form can be obtained by e-mailing your federal express address to smcqueen@energetics.com.

ATTACHMENT 6

DETAILED BUDGET

Attachment 6 – Detailed Budget

DOE contracts require the budget be provided in the categories listed in the tables below. This information should be submitted as an attachment to your 5-page proposal.

Total Budget	Total Project	DOE Request	Cost Share
Direct labor			
Fringe benefits			
Supplies			
Travel			
Materials			
Equipment			
Construction			
Contractual			
Other direct			
Total Direct			
Indirect			
Total Project			

Budget	Year 1 Total	Year 1 Request	Year 1 Cost Share	Year 2 Total	Year 2 Request	Year 2 Cost Share	Year 3 Total	Year 3 Request	Year 3 Cost Share
Direct labor									
Fringe benefits									
Supplies									
Travel									
Materials									
Equipment									
Construction									
Contractual									
Other direct									
Total Direct									
Indirect									
Total Project									

ATTACHMENT 7

OIT PROJECT PERFORMANCE METRICS

Attachment 7 – OIT project Performance Metrics

1. Technology Description

A. Please provide a concise ***narrative description*** (no more than one-half page) of the new technology you are proposing, addressing:

- Its function, and benefits to the industrial user of the technology
- The state-of-the-art technology it replaces
- The goal(s) of the project
- Potential limitations or barriers to the technology•s application
- Plant modifications necessary to incorporate the technology (will the technology retrofit an existing system or totally replace existing technology?)
- Known competing technologies (current or emerging)

B. Define ***one unit-year*** of operation (What is a typical process unit? What is the typical unit capacity? (e.g., tons/year/unit, million Btu/year/unit, size of one plant or process using the new process/equipment/model, etc.))

C. Estimate the ***equipment lifetime*** (in years):

D. Will using the technology/process involve a ***retrofit*** of existing technology/process or a ***replacement*** of a unit operation or plant section? (***please explain)***

E. Estimate the ***initial capital cost*** (equipment + installation) of one ***new*** technology unit: _____ and one ***current*** technology unit

F. Estimate the annual ***non-energy variable costs*** associated with the ***new*** _____ and ***current*** _____ technology unit.

2. Market Assessment

A. Estimate ***number of installed units in U.S. market*** (total number of units or applications that are currently in use)

B. Estimate ***ultimate potential market share*** (the maximum size of the market, as a percentage, in which the technology or process would be applicable)

C. Estimate the ***likely technology market share*** (the percentage of the potential market that the technology is likely to capture, given competing technologies, etc.)

D. Estimate the ***year of commercial introduction*** (the year in which you expect the first unit to be in commercial operation)_____

E. Estimate the ***time to total market saturation*** (5 to 40+ years)

3. Energy Consumption (*per unit-year of operation)*

Please complete the following table, basing your estimates on **one unit-year** of operation. As indicated below, physical units are preferred, but you may also provide your estimates in terms of Btu consumed (PLEASE NOTE UNITS AND UNIT SIZE FOR EACH FUEL TYPE, IF DIFFERENT FROM THAT SHOWN IN TABLE).

Fuel Type	New Technology	Current Technology	Comments
Annual Unit Energy Use (in physical units)			
Electricity (million kWh)			
Natural Gas (million cubic feet)			
Petroleum (million barrels)			
Steam Coal (million short tons)			
Black Liquor (thousand tons)			
Other (please specify)			

4. Non-Energy Related Environmental Impacts (*per unit-year of operation)*

Please complete the following table, basing your estimates on **one unit-year** of operation. (PLEASE NOTE UNITS AND UNIT SIZE FOR EACH EMISSION TYPE, IF DIFFERENT FROM THAT SHOWN IN TABLE).

Non-combustion Related Emissions	**New Technology**	**Current Technology**	**Comments**
Annual Non-Combustion Related Emissions (metric tons/unit-year)			
CO_2 (expressed as metric TCE)			
Other greenhouse gases (CH_4, HFCs, CFCs)			
SO_2			
NOx			
Particulates			
VOCs			
Hydrocarbons			
CO			
Toxic (TRI) (please specify)			
Hazardous (non-TRI) (please specify)			
Non-Hazardous Solid Waste (RCRA) (please specify)			
Other (please specify)			

TCE = tons carbon equivalent ($44C0_2/12C$